The American Heartworm Society (AHS), the American Association of Feline Practitioners (AAFP) and Pfizer Animal Health are proud to announce the winner of the KNOW Heartworms Veterinary Hospital Awareness Contest, Wolftever Pet Hospital. The entire staff in Harrison, Tenn., successfully and creatively implemented a KNOW Heartworms campaign that educated clients about feline heartworm disease and encouraged prevention.

Dr. Darlene White, a veterinarian at Wolftever Pet Hospital, received a KNOW Heartworms clinic kit in February: “It was the best education packet I’ve ever received. It hit all levels, not just the veterinarian or the veterinary technician. There was something in there for everyone, from the educational articles to the coloring pages for children.”

The staff of Wolftever Pet Hospital used the materials in the kit to educate the community as well as their own clients.

(Cont’d on page 10, Creative Ways)
Making Sense of Feline Heartworm Disease

The American Heartworm Society (AHS) has been a proud partner of KNOW Heartworms since its launch in January. The campaign has fostered the Society’s overall goal of furthering knowledge and understanding of heartworm disease. As a Society, we are continually trying to find new and better ways to educate about heartworms. For example, we received feedback regarding our incidence map. Veterinarians in certain areas were concerned their regions were not showing the heartworm prominence they’ve been experiencing. We updated the map, seen here, to include the latest data and more detail.

As a spokesperson for the campaign, I am seeing firsthand the impact KNOW Heartworms is having on the animal health field. Our campaign is turning heads, and many are assuming that this disease is a new occurrence in cats. In reality, heartworms were first reported in cats in 1921, but we have seen an increase in the number of cases of feline heartworms diagnosed in the last decade. This is mostly due to an increased awareness of the disease among veterinarians as well as pet owners. In 1998, over half of the programming in the American Heartworm Society’s Triennial Heartworm Symposium was focused on feline heartworm disease, providing vital information on diagnostics and prevention. This year, for the 2007 Symposium, we’ve devoted an entire day to the subject, where detailed information on the pathogenesis of Heartworm Associated Respiratory Disease will be presented along with updated information on diagnosis.

I wrote in the last Inside & Out article about how antigen-based tests are less effective for cats than dogs, and I’ve received many inquiries about this topic. First, AHS recommends using both antigens and antibody tests for screening. Since we recommend placing all cats on prevention, one might ask, “Why test?” One reason is to get data from your area if it’s not available, the other is for medical/legal reasons. If you don’t test, but place a cat on prevention and two years later the cat dies as a result of heartworms, was the cat previously infected or did the prevention fail? If either test yields a positive result, the cat should still be placed on prevention. All cats should be on prevention.

I’ve also fielded questions on false positives in antibody test results. In fact, false positives are extremely rare, only occurring less than 2 percent of the time. Because we now have a better understanding of feline heartworm disease, we now know what we are looking for. Our interpretation of a positive antibody test indicates the cat is either currently infected or was previously infected, not just that it was exposed to the infective stage of the parasite.

(Cont’d on page 8, Making Sense)

Widespread Endorsements Will Strengthen KNOW Heartworms’ Influence

The KNOW Heartworms campaign is off to a great start, and the American Association of Feline Practitioners (AAFP), is proud to continue its partnership with the American Heartworm Society with the generous support of Pfizer Animal Health. The campaign has provided a channel for collecting and disseminating information to veterinarians about this significant health hazard that is impossible to cure, difficult to manage but entirely preventable. Like many veterinarians, I didn’t always see heartworm disease as a threat to cats. There was a time when we thought all the peribronchial disease we were seeing was ‘just’ feline asthma. I first considered it when Dr. Ray Dillon began sharing his research, even though I’d seen my first sudden death case that had an adult worm on postmortem many years prior. Once I was aware of feline heartworm disease, I started to recognize radiographic signs of pulmonary artery enlargement, truncation or tortuosity, even without signs of pulmonary parenchymal disease, and I recognized that this was a real entity. I still believe there are diseased cats that I haven’t been able to definitively diagnose, but are highly suspect. I’ve received calls from colleagues in our area who thought the syndrome didn’t even exist, but now we have a significant amount of scientific information that proves otherwise.

The interest is growing as more people hear the message. In April, Dr. Nelson led a presentation from the American Heartworm Society with the American Association of Feline Practitioners, a group for which she has been a board member since 1998, and was president in 2006.

Practitioners are just now starting to understand that feline heartworm disease is more of a pulmonary problem than a cardiovascular one.

—Dr. Nelson

There was a time when we thought all the peribronchial disease we were seeing was ‘just’ feline asthma.

—Dr. Brunt

Dr. Nelson is considered a pioneer for his clinical work in the study of heartworm disease in cats. In 1997–98, after conducting his own study to determine true incidence. His work resulted in a paper presented at the 1998 Symposium, “Recent Advancements in Heartworm Disease.”

Charles Thomas (Tom) Nelson, DVM
Past President, American Heartworm Society

Jane Brunt, DVM
Past President, American Association of Feline Practitioners

Dr. Brunt is the founder and owner of the Cat Hospital At Towson, the first feline exclusive veterinary hospital in Maryland. She is the KNOW Heartworms spokesperson representing the American Association of Feline Practitioners, a group for which she has been a board member since 1998, and was president in 2006.

The incidence of heartworm disease shown in this map is based on the average number of cases per reporting state. Darker colors indicate higher average incidence. This heartworm map is reported each year. The feline prevalence map is updated annually.
New Study Reveals Pathology of Feline Heartworm Disease; Proves Existence of HARD

A landmark study1 that shows conclusively that heartworms do not need adult maturity to cause pathology in cats has answered many of the questions surrounding feline heartworm and greatly extended scientific knowledge about the long-misunderstood disease.

Recent efforts by researchers at Auburn University bear out a hypothesis developed through earlier research and confirm fundamental differences in the way heartworms affect cats and dogs. In so doing, these reinforce an emerging consensus that feline heartworm is more insidious than previously thought and underscore the importance of prevention.

Therapy, which was conducted by Dr. Ray Dillon, DVM, MS, MBA, DACVIM, and Byrom Blagburn, MS, Ph.D., was recently presented at the 2007 American College of Veterinary Internal Medicine Forum, and was published in a special Parastas Supplement to Veterinary Medicine. Dillon and Blagburn are affiliated with Auburn’s College of Veterinary Medicine and are long-time leaders in the field of heartworm research.

“This is a major study from people who already have contributed a tremendous amount to our understanding of heartworm disease in dogs and in cats,” says Clarke Atkins, DVM, Professor of Medicine and Cardiology at North Carolina State University’s College of Veterinary Medicine.

“What they’ve done is show in great detail that the effects of feline heartworm infection are more extensive than we previously had known. And because both diagnosis and treatment of the disease are problematic, the study highlights once again the importance of prevention.”

Jule Levy, DVM, Ph.D., Professor of Small Animal Medicine at the University of Florida, said, “This work has made a major impact in our understanding of heartworm disease in cats. It has shifted our focus from adult worms to more immature stages of heartworm development in a solidly defined feline heartworm disease as a significant pulmonary syndrome, now defined as Heartworm Associated Respiratory Disease.”

Shifting Perspective

Understanding feline heartworm has always been challenging due to the difficulties in testing for it and its frequent asymptomatic presentation. As a result, the affliction—unlike its canine counterpart—was thought to be infrequent in occurrence and relatively benign in effect.

But conventional wisdom began to shift after the 1998 Heartworm Symposium, where 60 percent of the papers presented were on feline heartworm disease. One of the presentations was a study by Dr. Tom Nelson, past president of the American Heartworm Society, that showed the prevalence of heartworm infection in a random sample of cats was higher than the rates for feline heartworm disease.

In 2005, researchers at the University of Florida reported pulmonary arterial lesions in cats that did not have adult heartworms in the heart and lungs but were antibody positive.3 This led the scientists to postulate that the lesions were caused by the death of immature heartworm larvae. The hypothesis suggested that the disease followed a fundamentally different course than canine heartworm, since heartworms in dogs typically do not cause significant pathology until they reach the adult stage.

An In-Depth Assessment

The recent Dillon-Blagburn study sought to document in detail the progression of feline heartworm disease. An expert on feline heartworm’s pathophysiology and chronic respiratory illness, agreed that the Auburn experiment will likely continue to produce new science and forward. “This was a very broad and ambitious study, and I think we’re just scratching the surface in terms of what we will ultimately gain from it,” he said. “I’m sure they have a lot of data that they haven’t had time to look into yet.”

Levy added, “I hope these results will raise awareness among practitioners that heartworms are a threat to cats even if adult worms never develop. It appears that even transient exposure to immature parasites can leave cats with substantial lung pathology that may persist long after any trace of the parasite has been eliminated. Knowing this, practitioners can take a more aggressive stance in promoting heartworm preventive use in cats.”

Nelson of the American Heartworm Society said the work by Dillon and Blagburn should help deflect lingering skepticism in the veterinary community about pathogenicity in infections with juvenile heartworms in cats.

“If you’re not able to see something and not able to diagnose it, you’re inclined to believe it isn’t there,” he said. “But you very quickly become a believer when you actually understand what has been demonstrated in these recent studies. It’s like smoking. You can’t necessarily see it, but the damage is being done.”

Auburn University Study Highlights:

• An infection with only immature heartworms can cause significant respiratory disease in cats.
• The damage immature heartworms cause is almost as severe as disease resulting from an adult heartworm infection.
• HARD is an inflammatory response to heartworm infection.
• The extensive inflammatory response can potentially damage the pulmonary arteries, arterioles and the small and large airways of the lung parenchyma.
• Heartworm infection mimics bronchial disease; therefore, it is often misdiagnosed.
• Heartworm larvae begin causing damage to the respiratory system months before antigens can be detected.

References


Images courtesy of Dr. Ray Dillon and Dr. Byrom Blagburn. Auburn University College of Veterinary Medicine. 

Significant bronchial and interstitial disease of the caudal lung lobes is evident in this radiograph of an infected cat.
KNOW Heartworms Changes Perceptions about Feline Heartworm Disease

HARD Data Critical to Paradigm Shift

KNOW Heartworms, a partnering of the American Heartworm Society (AHS) and the American Association of Feline Practitioners (AAFP), underwritten by Pfizer Animal Health, launched at the North American Veterinary Conference last January. In the ensuing six months, veterinarians nationwide have requested clinic kits, studied materials and conducted clinic seminars. In addition, a public outreach campaign has garnered millions of media and online impressions to educate consumers about feline heartworm disease.

The partnership between the organizations behind KNOW Heartworms has been key to the campaign’s success. The AHS has long been considered the source for the most up-to-date information on heartworms. Through the campaign the groups are able to educate veterinarians across the United States. As a result, many practitioners are rethinking their stance on feline heartworm and taking a renewed interest in prevention.

Shannon McCourt, DVM, of Hillsdale Animal Hospital in Advance, N.C., is one veterinarian who has been impacted by KNOW Heartworms. “Before hearing about the campaign, I didn’t consider feline heartworms to be as much of an issue, but now I see it as a more impending threat to our feline patients,” Dr. McCourt added. “One of the most compelling aspects of the campaign is being able to see the severity of bronchial disease that can occur from a low-worm burden, and realizing that it may be misdiagnosed as feline asthma.”

“Now, over 85 years since the first reported case of feline heartworms, with this campaign we are finally starting to get this disease the attention it deserves,” Tom Nelson, DVM, KNOW Heartworms spokesperson and past president of AHS, said. “KNOW Heartworms is just the beginning of veterinarians educating themselves on the complexity of heartworm disease.”

Driving the renewed interest in feline heartworm disease is the scientific data presented in the campaign. The term HARD was defined with a collaborative effort between researchers from the University of Florida, Auburn University and the board for the AHS. This term is a reminder to veterinarians and pet owners that heartworm in cats presents itself differently than it does in dogs.

Leigh Sheridan, DVM, of Columbia Cat Clinic in Columbia, S.C., has been a longtime proponent of feline heartworm prevention. “The Web site is a nice tool,” she said. “I’ve recommended it to clients as a reliable source. It takes the burden of educating clients off me since I have limited face time with them.” Dr. Sheridan has also found the Five Myths and Misunderstandings useful, not only in educating her clients, but herself as well. “I was interested in learning that even an immature heartworm can cause such significant pathology, which is revealed in the myth, Adult Heartworms vs. Larvae.”

Gayle Craig, CVPM, also found the Web site useful. The staff at her clinic, Countryside Veterinary Hospital in Chelmsford, Mass., has been a longtime proponent of feline heartworm prevention in their practice all year long. For more ideas on how to promote awareness of feline heartworm disease, visit www.knowheartworms.org

While spring is typically the season to promote heartworm prevention, the AHS and AAFP recommend year-round prevention and will continue working to get all cats on preventives as KNOW Heartworms continues. Make it a point to integrate feline heartworm prevention in your practice all year long. For more ideas on how to promote awareness of feline heartworm disease, visit www.knowheartworms.org

Direct your clients to www.knowheartworms.org for the latest information about feline heartworm disease.

Feline Heartworm Disease 5 Myths and Misunderstandings

1. Dogs vs. Cats
   Heartworm disease is not just a canine disease. Heartworms infect cats differently than dogs, but the disease they cause is equally perilous.

2. Indoor vs. Outdoor Cats
   It’s myopic to think that indoor cats are safe, or that outdoor cats are at risk. Heartworms can infect indoor or outdoor cats and will continue working to get all cats on preventives as KNOW Heartworms continues.

3. It’s a Heart Disease
   The term “heartworm disease” is a misnomer, as it mostly affects the lungs and not just the heart. Signs are often mistaken for feline asthma, allergy, bronchitis or other respiratory diseases.

4. Adult Heartworms vs. Larvae
   Cats do not need an adult heartworm to exhibit clinical signs; in fact, larvae are a main cause of the problem. Studies show 50 percent of cats infected with heartworm larvae have no signs at all. Clinical signs associated with HARD.

5. Diagnosis
   Diagnosis is difficult as negative radiographs and antibody tests do not rule out heartworm disease. Positive tests, however, are significant.

Signs Associated with HARD: Heartworm Associated Respiratory Disease

- anoxia
- blindness
- collapse
- convulsions
- coughing
- diarrhea
- difficulty breathing
- fainting
- lethargy
- rapid heart rate
- sudden death
- vomiting
- weight loss

This illustration is used to visually communicate to your clients the effects of feline heartworm disease and the symptoms associated with HARD.
Pandora was diagnosed with HARD in February.

Veterinarian’s Eyes Opened to HARD

When a cat presented with coughing and a voice change, Dr. Caroline Simard says she never considered heartworms might be the cause: she thought it might be asthma and decided to do some blood work. “Totally by mistake I included the heartworm antigen test, and it came back positive,” she said. “The cat, it turned out, had Heartworm Associated Respiratory Disease, or HARD.”

Dr. Simard practiced in Montreal, Canada, for 12 years before moving to Point Breeze Veterinary Clinic in Pittsburgh, Pa., three years ago. “In Canada, because it is colder, veterinarians mostly recommend giving preventative during the summer. Any news of prevention and products takes a few years to get up there, and I just hadn’t been exposed to it,” she said. Dr. Simard had only ever seen three cases of heartworms, and all were canine in Pittsburgh.

Pandora, a 10-year-old cat, started breathing heavily, gagging and coughing around December of last year. Pandora had never had any health problems before, so her owner, Carrie Rudolph, began to worry. She made an appointment with Dr. Simard when Pandora’s condition didn’t improve. She thought it might be asthma and never considered heartworms might be the cause. When Dr. Simard alerted Rudolph to Pandora’s diagnosis, she wasn’t shocked. “I had researched feline heartworm disease and thought it might be one of the possibilities, but I’ve since done more research and was surprised to learn that I don’t live in an area with high incidence,” Rudolph said.

Dr. Simard added, “I had heard about HARD, but this case absolutely changed my thinking. I’ve since put my own cats on prevention, and I’ve been telling this story to all my feline clients, recommending prevention.”

Pandora is now receiving a steroid treatment and is no longer showing signs of respiratory distress. Dr. Simard tested Rudolph’s other two cats for heartworms. Both of the tests came back negative, and the cats are now on prevention.

In February, and before her visit did some research on the Internet. She read online that heartworms could be the cause of Pandora’s distress, but knew heartworms were rare in felines, so she didn’t bring it up in her visit. When Dr. Simard alerted Rudolph to Pandora’s diagnosis, she wasn’t shocked. “I had researched feline heartworm disease and thought it might be one of the possibilities, but I’ve since done more research and was surprised to learn that I don’t live in an area with high incidence,” Rudolph said.

We shouldn’t worry about false positives; if anything, we should be concerned about false negatives as we’ve found that a significant number of cats with adult heartworms have tested negative to antibodies. Again, using both an antigen and antibody test increases your chances of making the appropriate diagnosis.

Nationwide serological data reports 12 to 16 percent of cats are antibody positive, and another study from the University of Florida indicates over half of antibody-positive cats have pulmonary pathology. So, one might ask, “Why aren’t we diagnosing more cases?” Practitioners are just now starting to understand that feline heartworm disease is more of a pulmonary problem than a cardiovascular one. This pulmonary pathology is frequently misdiagnosed as feline asthma, but fortunately the treatment for both heartworm pathology and asthma is the same—prednisone and bronchodilators. The difference is asthma cannot be prevented, but heartworm disease is 100 percent preventable. What complicates things even further is some cats are asymptomatic, and they may stay that way until the worm develops into an adult worm and finally begins to die. It may only take one dying worm to cause severe pulmonary inflammation and thromboembolism, which often leads to fatal acute lung injury. At that point, it is too late to save the cat, a cat which could have lived a full, healthy life if it had been put on prevention.

While we have made significant progress on understanding feline heartworm disease in the last decade, and notably in the last year with KNOW Heartworms, we still have much to learn. Like most diseases, finding answers to questions ultimately leads to more and more questions.

Pay heed to the warning signs if you have a cat. My wife and I have a cat. Cats infected with heartworm disease do not show any outward signs. Here are some of the signs. Difficulty breathing, diarrhea, weight loss, and the last one—SUDDEN DEATH…”

—Jay Leno, The Tonight Show
Creative Ways

(Cont’d from page 1)

“We went to a local elementary school and did a program for the second and fourth graders,” Dr. White said. The staff created costumes and goody bags containing coloring pages for the 160 children and handouts for their parents. Staff members then displayed the students’ artwork in the clinic. To remind cat owners to have their cats tested for heartworm and use a preventive, the staff made posters for the clinic and discussed heartworm disease with clients.

Dr. White said the Five Myths and Misunderstandings were an excellent teaching tool for everyone. Not only for the veterinarians, but for the veterinary technicians and the entire office staff. “The KNOW Heartworms campaign gave a lot of information to the staff that they can pass on to the clients.” Dr. White especially liked the “Indoor vs. Outdoor Cats” myth. She said some clients have been skeptical of the need for prevention for their indoor cat, but Dr. White is pleased to now have studies to back her stance on prevention for all cats.

“Since the campaign has come out, I’ve studied all the materials. I now see that feline heartworm is more of a problem than I originally thought,” Dr. White said. “We have promoted heartworm prevention in dogs for years—now it is time to do the same for our feline patients.”

Wolftever was not the only clinic that showcased how it promoted feline heartworm disease. Veterinarians from across the nation revealed how their clinics’ campaigns were successful.

The staff of Cat Hospital At Towson (CHAT), the second-place winner, was excited and proud to have made an impact educating cat owners and helping cats. The entire CHAT team of 25 members participated in the KNOW Heartworms campaign, using a variety of approaches to teach their clients about heartworms. They put up displays about testing and prevention, and they produced a DVD about heartworms to play in the waiting room. Staff members encouraged clients to fill out a survey on cat health, after which they were eligible to win a free supply of topical preventive.

Leading up to the Easter holiday, the staff also distributed plastic Easter eggs filled with educational information on heartworms. CHAT saw great success with all its initiatives and was able to get many clients to protect their cats with a heartworm preventive.

VCA Hemingway in Saratoga, Calif., tied for third place in the contest with Eastex Veterinary Clinic in Kingwood, Texas. Frances Wolftever, second-place winner of the contest, was excited and pleased with the new studies are sure to have made an impression,” she added. “We will continue to inform our clients about the hazards of heartworm disease in cats.”

A free latte and smoothie bar was a hit, and information table displayed elements from KNOW Heartworms at VCA Hemingway Cat Hospital in Saratoga, Calif., which tied for third place with Eastex Veterinary Clinic in Kingwood, Texas.
Dr. James R. Richards: A Champion of Cats; A Friend to All

In April, James R. Richards, DVM, the gregarious, always smiling, always positive ambassador of the veterinary profession was unexpectedly lost to us. He will be missed by all of those who knew him personally and professionally, and those who may not have known him but relied on his sage advice regarding feline health care.

While Dr. Richards was noted as one of the leaders in changes in vaccine protocols, his most recent public education endeavors focused on the general well-being of cats and parasite control. He represented the American Association of Feline Practitioners (AAFP) as a spokesperson for the KNOW Heartworms campaign, on which he worked tirelessly to increase awareness of heartworm disease in cats.

His legacy to foster the well-being of cats began on a farm in Ohio, where he said he “was far better at raising cats than anything else.” This passion for cats was fulfilled in Dr. Richards’ work as director of the Cornell Feline Health Center, as a president and media spokesperson for the AAFP, and as editor-in-chief of Cat Watch, a newsletter for cat owners.

Dr. Richards was an expert communicator on feline health, and he used his skills to speak with and teach veterinarians, reporters and pet owners about complex issues related to the health and well-being of cats. He was truly a voice of reason in all of his endeavors, and his down-to-earth communication style made everyone he spoke with feel comfortable.

It was Dr. Richards’ intent to have his work make a difference in the lives of cats, and his legacy will continue in the many initiatives he helped establish, including the KNOW Heartworms campaign. Pfizer Animal Health would like to acknowledge Dr. Richards not only for his work on this campaign, but for his contributions to the veterinary profession and the health of cats.

Pfizer Animal Health